

PIEZOELECTRIC CERAMIC COMPOSITION

Patent number: JP11228225

Publication date: 1999-08-24

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Applicant: MURATA MANUFACTURING CO

Classification:

· international: C04B35/495; H01L41/187; C04B35/495; H01L41/18; (IPC1-7):

C04B35/495; H01L41/187

· european:

Application number: JP19980035713 19980218

Priority number(s): JP19980035713 19980218

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Abstract of JP11228225

PROBLEM TO BE SOLVED: To obtain a piezoelectric ceramic composition consisting mainly of potassium sodium lithium niobate, having a dielectric constant of ≤ 180 and the resonance frequency coefficient of thickness vibration of $\geq 3,000$ Hz.m so as to be suitable for using in high frequency region, and also having such favorable property as to be ≤ 100 ppm in the temperature coefficient of resonance frequency. SOLUTION: This piezoelectric ceramic composition consists mainly of a composition of the formula: $(1-n)(K1-x-y Na x Li y) m (Nb1-z Ta z) O3$ (wherein, M1 is a bivalent metal atom such as Mg, Ca, Sr, Ba or Pb; M2 is a tetravalent metal atom such as Ti, Zr, Sn or Hf; $x) \leq 0.9$; $0.02 \leq (y) \leq 0.03$; $0.75 \leq (x+y)$; $0 \leq (z) \leq 0.3$; $0.98 \leq (m) \leq 1.0$; $0 \leq (n) \leq 0.05$).

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PIEZOELECTRIC CERAMIC COMPOSITION

Patent number: JP11228227

Publication date: 1999-08-24

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Classification:

· international: C04B35/495; H01L41/187; C04B35/495; H01L41/18; (IPC1-7):

C04B35/495; H01L41/187

· european:

Application number: JP19980035715 19980218

Priority number(s): JP19980035715 19980218

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Abstract of JP11228227

PROBLEM TO BE SOLVED: To obtain a piezoelectric ceramic composition consisting mainly of potassium sodium lithium niobate, having such favorable properties as to be $\geq 1,000$ in dielectric constant, $\geq 25\%$ in electromechanical coupling coefficient K_p , and > 200 deg.C in Curie point. SOLUTION: This piezoelectric ceramic composition consists mainly of a composition of the formula: $(1-n)(K1-x-y Na x Li y) m (Nb1-z Ta z) O3$ (wherein, M1 is a bivalent metal atom such as Mg, Ca, Sr, Ba or Pb; M2 is a tetravalent metal atom such as Ti, Zr, Sn or Hf; $x) \leq 0.3$; $(y) \leq 0.1$; $(y) \leq 0.3$; $(x+y) \leq 0.75$; $0 \leq (z) \leq 0.3$; $0.98 \leq (m) \leq 1.0$; $0 \leq (n) \leq 0.1$).

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